« Viral infection »

1- Mention 4 skin diseases caused by herpes virus group

2- Causative organism of:- wart, Mollasaum Contagiosum, genital herpes.

3- Herpes Simplex viral infection

4- Clinical Manifestions of Varicella zoster infection.

5- Clinical Manifestions of trigeminal herpes zoster.

6- Clinical picture, tt of genital wart.

7- Epidermodysplasia Verruciformis

8- Histopathological Criteria Verruca Vulgaris.

9- Mention dosing schedules of different systemic antiTherapeutic drugs in Herpes Simplex (oral, genital) & Varicella zoster infection.

10- Give an account on anti-viral drugs.

11- Therapy of Varicella zoster infection.

Viral Infections

① Herpes Simplex viruses (HSV1 & HSV2)

- HSVs Have worldwide distribution and produce primary, Latent and recurrent infections.
- There are ② Subtypes of HSV which show no Cross immunity:-

(direct Contact with Contaminated Saliva) (Sexual Contact). HSV1 :- affects Skin and Oral mucosa
HSV2 :- affects genital areas (HSV1 may also be found in genital infection « Oro-genital Sex »

Try primary infection → Latency → reactivation → recurrent infection

- Try primary infection: (No neutralizing antibodies). 10% Symptomatic (10% clinical) 90% asymptomatic (90% subclinical)
- Latency: The virus remains dormant in Sensory ganglia.
- reactivation: Spontan / Stimulus eg stress fever immunosuppr
- recurrent infection: (patients with neutralizing antibodies) (Previously infected)

Diagnosis → ** All persons infected with HSV are potentially contagious whether or not The Lesions are visible because of asymptomatic Viral Shedding. كلهم معديين

① Viral Culture
② Tzanck Smear → For rapid preliminary diagnosis تشخيص مبدئي سريع
- it Shows Multi-nucleated epithelial giant cells (Fusion of infected Keratinocytes).
- it doesnot differentiate between HSV and VZV

③ DFA (Direct Fluoresent antibody) assay :
→ able to distinguish between HSV and VZV.

④ PCR :- Rapid / Sensitive / Specific Method to detect HSV DNA.

⑤ Serological Tests (Western blot) ✓ gold standered for Serological assay
- 99% Sensitive & Specific for HSV antibodies.
- Other Tests That Can differentiate between HSV1 & HSV2 antibodies Depend on (Type-specific glycoprotein) G1 From HSV-1 & G2 From HSV-2.

⑥ Biopsy :- to exclude Cutaneouse Conditions That Can Mimic HSV
e.g → Vesicular eczematous dermatitis or recurrent FDE on genitalia.

Histopathology :-
(1) Ballooning degeneration of epidermal cells → marked Dry acantholysis → intra epidermal Vesicle
(2) Esinophilic intranuclear bodies Surrounded by a clear Halo → are wualy Seen in balloon cells.

→ **Clinical Manifestations of HSV-1 & HSV-2.**

	Immuno Competent individual	Immuno. Comprimzed individual
HSV-1	→ Try infection usually asymptomatic • Herpetic gingivostomatitis • Herpes Labialis • Herpetic whitlow.	• Widespread Local infection • Chronic Ulcers • Dissiminated cutaneouse infections. • Dissiminated Visceral infections.
HSV-2	→ Try infection Usually asymptomatic • Herpes genitalis (Try & recurrent) • Herpetic whitlow.	

* Clinical Features :-

(2)

Primary Herpes Simplex

IP 3-7 days

→ affect children (2-5 yrs)

→ Prodrome :
- → Fever / malasia
- → Localized burning
- → Tender Lymphadenopthy

→ occurs before the onset of lesions

→ Lesions : Large painful vesicles on erythematous base (no tendency to grouping)

vesicles → pustules → erosions.

→ crusting → spontaneous resolution (2-6 weeks)

* + Regional LNs are enlarged & tender.

Recurrent Herpes Simplex

→ grouped small vesicles on erythematous base

→ The vesicles are replaced by crusts

→ Healing occurs within a week → normal skin

* Recurrent Condition.

* Regional LNs are not enlarged (unless any infective of vesicles).

→ prodroma : The onset is usually preceded by a prodroma of localized itching & burning & erythema (only several hrs)

→ no fever or malaise.

: Clinical Varieties :

① Herpes Labialis (Facialis) :
* Commonest
* Site → (Lips) ✓ are the most frequent site.
→ Nose - Cheeks - ears → may also be affected.
* post-herpetic erythema multiforme may occur (within 9 days)
(Herpes-associated erythema multiforme).

② Eczema Herpeticum (Kaposi's Varicelliform eruption) :
* with HSV1 → in patients with pre-existing dermatoses e.g. → atopic dermatitis AD, Darier disease, MF, PF, ichthyosis, burn.
* Clinically :
→ Extensive eruption of vesicles & pustules occur mainly on areas of pre-existing dermatosis + Fever.
→ Face (usually severly affected) + Marked edema
→ The presence of Monotonous discrete 2-3 mm Hemorraghic Crust is Diagnostic.

③ Keratoconjunctivitis → Can be primary or recurrence
→ recurrence → present with branching dendritic corneal ulceration (seen with fluorcent stain)
→ can lead to scarring & blindness.

④ Gingivostomatitis

⑤ Inoculation HS (Herpetic whitlow) : HS infection of the digits in dental & Medical personnel (do not routeinly use gloves)

⑥ Herpetic Folliculitis : of the beared region in males

⑦ HS pneumonia : (Fatal)

⑧ HS encephalitis : Manifest as : Seizures / irritability / tremors / bulging fontanelle

⑨ HS in compromised host (Dissiminated HS) :

Etiology
a) Wiskot aldrich Syndrome
b) Lymphoma - leukaemia
c) Severe burn
d) Prolonged immunosuppressive Therapy
e) AIDS.

Manifestations

Chronic ulcerative HS
→ persistant ulcers & erosions
→ starting on the face or perional area.
→ May be widespread extension → systemic HS
→ Chronic perineal ulcerative HS →
(young males homosexuals in AIDs)

Generalized acute muco-cutaneous HS
* Starts with localized vesicular eruption located in genital areas (in HSV2) or other areas (in HSV1)
* Rapid dissimination with Fever may occur suggestive of Small pox or Varicella.
* Death may result.

Systemic HS
- usually follows oral or genital lesions of HS
As
→ area of Necrosis in liver
→ adrenal - pancreatic death.

⑩ Herpes gladiatorum :→ HSV primary infection, primarily noted in wrestlers المصارعين
↳ involving extra-mucosal sites typically over face, neck, or arms.

⑪ Neonatal Herpes Simplex :

** The risk of Transmission to the neonates from an infected mother is
(high) 50% → among women with 1st episode genital herpes near the time of delivery
and (low) <3% → among women with recurrent herpes.

ⓐ Early intra-uterine infection :- Disturbed embryogenesis
not compatible with life

ⓑ Late intra-uterine infection :- growth & psycomotor retardation.
Microcephaly
Wide Spread recurrent vesicular eruption (resemble epidermolysis bullosa)

ⓒ Neonatal infection :- Localized cutaneous HS in scalp or buttocks.

⑫ Genital Herpes (Herpes progenitalis):

Primary genital infection

*More Severe & prolonged Than > recurrent infection.
① Constitutional Symptoms
② painful grouped vesicles in genitalia → pustules → Crusting → Tender ulcers
③ painful lymphadenopathy
④ Cervicitis / urethritis / proctitis.

Recurrent genital herpes

*More frequent with HSV-2 > HSV-1.
* Mild
*① limited number of vesicles reappear on the genitalia or buttocks. (especially in women).
*② Prodroma ± followed by :- grouped vesicles → pustule → ulceration → resolution (1 week)
*③ Complications are uncommon.
*④ Frequency of recurrence Correlates with the Severity of the 1ry infection.

Treatement of HS

Prophylactic

1. Avoid trigger Factors
2. CS in pregnant Female with genital HS.
3. Male & Female with H. progenitalis :-
   - avoid intercourse if There is a history of H. progenitalis in male or female.
   - Spermicidal Foam For ♀ and Condom for ♂ Followed by wash with water & Soap after intercourse).
4. Specific vaccines to prevent recurrence
5. Non-Specific immune Therapy eg interferons.

Curative

1. Vesicular Stage : antiseptic eg gentian violet
   Crusted Stage : antiseptic ointment + Systemic antibiotic (2ry infection)
2. Antiviral Therapy :

Herpes Labialis

- 5% Acyclovir + hydrocortisone 1% Cream ٥ مرات في اليوم لمدة ٥ ايام
- + Valacyclovir 2gm (جرعة عالية) اقراص مرتين في اليوم يوم واحد

Herpes progenitalis

First episode	Recurrence	Recurrent in Setting of HIV infection
- Acyclovir 400 mg ٣ مرات في اليوم لمدة ١٠ ايام	- Acyclovir 400 mg ٣ مرات في اليوم لمدة ٥ ايام	- Acyclovir 400 mg ٣ مرات في اليوم
- Valacyclovir 1gm مرتين في اليوم لمدة ١٠ ايام	- Valacyclovir 500 mg مرتين في اليوم لمدة ١٣ يوم	- Valacyclovir 1gm مرتين في اليوم
		Recommended until all Muco-Cutaneous Lesions are Healed.

* Benefits of early tt of H. progenitalis :??

Early (24-48 hours of onset).
Acyclovir / Famicyclovir / Valacyclovir.

1. Reduce Pain الوجع
2. Reduce The duration of Viral shedding
3. Reduce The Time to heal For 1st episode
4. Reduce Recurrent genital Herpes.

* Eczema Herpeticum (Kaposi's varicelliform eruption)

- Acyclovir 400 mg ٣ مرات في اليوم
- Valacyclovir 1gm مرتين في اليوم

→ Recommended until all muco-cutaneo Lesions are Healed

* Immunocomprimised

- Acyclovir 400 mg ٥ مرات في اليوم
- Valacyclovir 1gm مرتين في اليوم

→ Recommended until all Mucocutaneo Lesions are Healed

* Neonatal HS

- Acyclovir 20 mg/Kg IV /8 hs For 21 days

tt of acyclovir-resistant hapes Simplex virus infection

③ Photoactivation

Painting The lesion with dye صبغة → Neutral red / toluidine blue
& Then exposing it to fluroent light.

.: Varicella and Herpes zoster :.

• Etiology :
- Varicella and HZ are produced by the same Viruse (Varicella zoster Virus).
- 1ry infection → chicken pox (Varicella) → Virus remains dormant in one of the Sensory ganglia → Condition enter latency period → Reactivation → Spread of the Virus to the skin supplied by the affected root → Herpes zoster (Shingles)

---

* Varicella (Chicken pox) :

* Commonly affect children
* Mode of transmission: ① Airborne droplets (usual route) ② Direct contact with vesicular fluid.
* Incubation period: 11-20 days
* Varicella is highly contagiouse → 80-90% of household contacts → develop clinical infection.
  → The affected individual is infectiouse from 1-2 days before skin lesions appear until all of vesicles have crusted.

• Mechanism
• During varicella infection
Viral replication within regional LNs —2-4 days→ primary viremia → Viral replication in the Liver, Spleen, other organs → Secoundry viremia → Seeds entire body (14 days post-exposure) اسبوعين

• During this period, the virus travel to the epidermis by invading the capaillary endothelial cells → Then VZV travels from the mucocutaneouse lesions to → dorsal root ganglion cells where it remains latent → until reactivation :

*Clinically • Fever → rash develops (macule → papule → vesicle (1-3mm diameter) with a clear serous fluid surrounded by a narrow red halo "dew drops on a rose petal" قطرات الندى على الوردة → pustule → crust → Seperates without scar 'unless secoundry infected'

• New lesions continue to develop → so different stages of lesions can be observed in the same time (polymorphic), the lesions are more numerous on Trunk.

NB
** A person with zoster → Can infect another with chicken pox → if the suspible individual comes into direct contact with vesicular fluid.

** Individuals with chicken pox or zoster → Cannot directly give another person zoster → because herpes zoster is caused by reactivation of latent VZV.

Complications
① 1ry Varicella pneumonia : (adults with Varicella) 10% Mortality rate
② Reye's Syndrome : Varicella + Fatal encephalopathy
③ Neonatal Varicella : Fatal, Disseminated, Severe → if the mother has developed varicella 5 days before delivery
④ Varicella in Comprimeced host : Dissimination to Various organs e.g Varicella pneumia → Death.

Treatement of Varicella :
① Calamine Lotion ② Cut nail short and wearing glouce
② Anti-Histamince
③ Topical or systemic antibiotic in any infection
⑤ Anti-viral.

Herpes Zoster

* Occurs in adults (>50 years) , 5% are children.
* Clinically: ① Pain :. is Usually 1st Manifestation.
② 3-4 days after → group of vesicles on an erythematouse base → arranged along the course of the Sensory nerve.
→ Strictly unilateral, lesions may be hemorragic or necrotic & ulcerated.
④ Regional LNs : enlarged, Tender
⑤ Healing :. within 2-3 weeks, usually with scar formation.
* Mode of Transmission: (1) Direct Contact (with broken blisters) , (2) Airborne droplets.
* patients are Contagiouse (Less Than Varicella), Newborns are at high risk of getting chicken pox from someone who has HZ
* Complications
① Post-Herpetic neuralgia (PHN) → Characterized by dysesthetic pain that persists after the skin lesions have healed.
• affect 10-20% of HZ patients and ++ in incidence & Severity with age.
• it is either → Continouse burning pain with hypertheotia
→ Spasmodic shooting type.
② Secoundry infection
③ Gangerne of Skin
④ HZ opthalmicus :Virus attack the gasserian ganglion (V) → (GG)
→ eruption on the tip of nose, upper eyelid, forhead.
→ Conjunctiva is red, swollen with Superficial or deep Keratitis.
N.B Lesions at tip of the Nose (Hutchinson's Sign) → Signal Possible Ocular infection → Since Nasociliary nerve is involved → which is abranch of the opthalamic nerve.
N.B ARNS → Acute retinal necrosis syndrome may occur with zoster of the opthalamic nerve.
⑤ Ramsy-Hunt Syndrome :. affection of the geniculate ganglion (GG) → ear pain/tinnitus/deafness
→ loss of taste sensation from anterior 2/3 of Tongue
→ Facial palsy.
⑥ Motor involvement :. 5% of cases (commoner in older patients & those with malignancy)
⑦ HZ in comprimised hosts → Dissiminated HZ with systemic Manifestations as → pneumonia encephalitis
⑧ Dissiminated HZ (unusual clinical presentation)
• persistant crusted verruous lesions in HIV-infected patient → ① atypical HZ in HIV patient ② More Than 2 dermatomes affected ③ cross Midline.
• post-herpetic hyperhydrosis.
• Dissiminated cutaneouse disease (>2 vesicle outside the area of primary & adjacent dermatomes).
⑨ Systemic Manifestations : pneumonia
encephalitis
gastro-enteritis.

---

* Diagnosis:
① Culture: → Don't grow on ordinary culture as HS
→ grow on tissue culture (human fetal diploid kidney cell)
② Not pathogenic for Several Laboratory animals (as in HS)
③ Tzanck Smear → as HS
④ PCR → highly sensitive & rapid Technique
⑤ Serology → +ve for HZ (diagnostic) if Serum has at least 4 Fold increase in titre of VZV

Treatement of VZV

Prevention

VZIG :
- in immunocomprimsed patients within 96 h (4 days) of exposure to varicella
- recommend for susceptible pregnant women
- Neonates whose mothers become infected shortly after birth.
- protection Lasts for (3 weeks)

② Life-attenuated VZV vaccine (Zostavax) (OKA Strain) ← Soft
- FDA approved
- very safe
- High efficacy (96% in preventing Varicella or less severe disease).
- ↓ incidence of HZ although the oka strain can reactivate and lead to herpes zoster (Mild), most cases of varicella following vaccination are due to wild-type virus.

General

① Analgesics مسكنات
② Vesicular Stage → cool compresses كمادات باردة
③ Crusted stage or any bacterial infection → Topical or systemic antibiotic
④ Care of ocular lesions
⑤ Carbamazepin (Tegretol) 600-800 mg/day
⑥ Systemic Steroid ?????
↓ incidence of post-herpetic Neuralgia if started early 5-6 days of onset.
Prednisone 40-60 mg/day for 2-3 weeks.

Antiviral agents

- effective: 1st 72 hours of vesicular eruption or within 7 days → beneficial.

① Acyclovir (Zovirax) ⇒ Dose: 800 mg 5 times daily for 7 days — خمس مرات في اليوم لمدة أسبوع
- effective by IV, cream (useless).
- Short serum half life (2.5-4 hours) → frequent dosing
- ↓ healing time & ↓ duration of Pain → No effect on PHN

② Valacyclovir (Valtrex) :
- prodrug of acyclovir (L-valayl ester of acyclovir)
- Dose: 1gm 3 times daily for 7 days — اجرام ثلاث مرات في اليوم لمدة أسبوع
- ↑ Oral bioavailability
- FDA approved for HZ
- ↓ healing time, ↓ duration of pain, little effect on PHN.

③ Famciclovir (Famvir)
- Dose: 500 mg 3 times daily for 7 days — جرعة ثلاث مرات في اليوم لمدة أسبوع
- ↑ Oral bioavailability
- FDA approved for HZ.
- it inhibit viral DNA polymerase.

④ Foscarnet (Foscavir)

TTT of PHN

---

* Varicella zoster virus infection

*Varicella : 20 mg/kg (acyclovir) → 4 مرات في اليوم
7-10 days

* HZ → acyclovir : 800 mg → 5 times daily / 7-10 days
→ Valacyclovir : 1 gm → 3 times daily / 7 days
→ Famiciclovir : 500 mg → 3 times daily / 7 days.

* Immuncomprimsed 20 mg/kg acyclovir
IV / 8h
For 7-10 days

* pediatric immuncomprimsed 10 mg/kg
IV / 8h
For 7-10 days

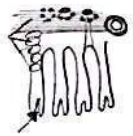
Treatement of PHN

1. Analgesices
2. Anti-viral → Famciclovir / Valacyclovir → within 72 h from 1st Vesicle → Both drugs ↓ duration & pain of PHN in ptn > 50 yrs
3. Corticosteroids → Used alone or in combination with anti-viral drugs
   ↓ inflammation → ↓ further nerve damage → & Chronic pain associated with it.
4. Anti-Convulsants → Carbamazepin (Tegretol) · 600-800 mg/day
   → Gabapentin (Neurontin) : 1st day : 300 mg 1 tablet
   2nd day : 2 tablet
   3rd day : 3 tablets
   (and on → doses ranging up to 3600 mg/day)
   * During acute herpes zoster : (Valacyclovir + Gabapentin)
   ↓
   Together are more effective in preventing PHN
   Than Valacyclovir alone.
   → Pregabalin (Lyrica) – Dose : 75-150 mg twice daily
   – The dose may be increased to 300 mg/day within 1 week based on efficacy and tolerability
   – in patients with reduced renal function → adjust the dose as it is primarily eliminated by renal excretion.
5. Tricyclic anti-depressants : eg amitriptyline (Tryptizol 10-25 mg) → up ↑ 75 mg
6. Nerve block : Sympathetic & Somatic nerve blocks.
7. Nerve Surgery
8. Local treatement : → EMLA cream
   → Capsaicin → 8% Capsaicin patch → recently approved by FDA for tt of PHN
   ↓↓ reduce pain up to 12 weeks
   after a 1 hour application.

Human papilloma Virus

① Common wart (Verruca Vulgaris) → Firm papules, with verucos hyperkeratotic surface

- occuring singly or in groups.
- Commonly on dorsal aspect of hands & fingers
- periungual warts are common



Q Histopathology Histopathological Criteria of Verruca Vulgaris.

-(1) Hyperkeratosis, Acanthosis, papillomatosis
-(2) Rete ridges → are elongated, Point radially towards the center of the wart
-(3) groups of Large Vaculated cells → in Upper stratum Malpighi & in granular layer
-(4) alter of parakeratosis lies over the crest of the papillomatouse elevation

② Filiform wart :- Show a thread-like horney projection.
arising from a horney base.
Seen Most Commonly → Face / Scalp
Butchers جزارين → high incidence of VV hands.

③ Verruca plana :- • Slightly elevated, Flat, Smooth papules, Linear arrangement in scratch marks (Koebner phenomena)
• Some patients with Flat warts develop clinically evident inflammation around this warts → precedes their spontaneouse involution

Histopathology
- Hyperkeratosis, Acanthosis
- No papillomatosis or parakeratosis
- Numerous Vaculated cells lie in the upper stratum malpighi & in granular cell layer
- Horney layer " pronoced Basket-wave appearance " → resulting from Vaculation of the Horny layer.

④ Plantar wart (V. plantaris)
- Commonly → pressure points → heel كعب / metatarsal areas فوق المشط
- painful (usually)
- Usually have rough Keratotic surface, studded with Multiple Small black dots (Thrombosed Capillaries within dermal papillae).
+ peripheral rim of Thickened skin
- When Multiple warts Coalesce into Large plaque → it is Called (Mosaic wart)

⑤ Myremica مايرميكا (Deep palmoplantar wart) :-
- Deep, Tender, endophytic lesions
- They donot Coalesce,
- They are usually Covered with a Thick Callus → its removal → Soft brownish tissue & Small bleeding points
(DD : Callus → no bleeding points)

Histopathology in Myremica :-

- The nuclei of epidermal cells is deeply basophilic
- Surrounded by a clear zone.
- cytoplasm contain Large, irregularly shaped, homogenous, esinophilic (inclusions) → representing Keratohyaline.

- Mucosal infection

① Condyloma accuminatum (Anogenital wart) :: Q:- CIP & Rx of genital wart.

- Mode of Transmission → ① Sexual contact ✓ Most Common
  ② non-Sexual route :- via Fomites.
- 90% of Condyloma accuminata → related to HPV types 6 and 11 (Least neoplastic potential)
- Clinically :- → Single or Multiple papular eruption.
  - → eruption may appear → pearly, Filiform, Fungating, Cauliflower, plaque-like.
  - → They can be → quite Smooth (on penile shaft), Verruous, Lobulated
  - → Eruptions may Seem → harmless / may have disturbing appearance.
- Site :- (areas with ++ Friction, during intercourse).
  - ♂ :- glans penis, Frenulum, Corona, prepuce, shaft, Scrotum
  - ♀ :- Labia, clitros, periurethral area, associated Vaginal or cervical affection may occur.
  - Both Sexes :- perineum, perianal area (in homosexuals male, after anal sex in female), anal canal, urethera, bladder.
- Examination :- all patients with genital wart should be examined by urethroscopy (urethral infection) or Colposcopy (For Vaginal or cervical infection)
- During pregnancy :- genital warts may increase in size & number → obstructed Labour. The wart may regress spontaneously postpartum.
- in HIV patients :- The lesions → Larger, More difficult to treat, ++ risk of dysplasia & neoplasia.

Epidermodysplasia Verruciformis (EV) Q:- Epidermodysplasia Verruciformis.

- Rare, AR, Familial skin disease, usually begins in childhood.
- Clinically :- it is characterized by ⓐ Long Lasting, wide spread Flat, wart-like lesions → Face/arms/Legs/back of hands.
  ⓑ Macular erythematous PV-like lesions → Face/neck/Trunk/arms → tend to become Confluent
- Malignant transformation → of some cutaneous lesions occur in (½ of patients)
- Etiology
  - Different HPV types occur in EV → Frequently SSB only HPV5 (Found in Most Cancers), HPV8 (oncogenic potential)
  - EV types → induce EV-like eruptions → in immunosuppressed patients (e.g AIDS, lymphoma patients)
  - EV-related HPV → have been isolated from normal skin of healty individuals (highly sensitive DNA detection) → indicating that Normal population act as reservoir for EV-types.
  - Recently → a Mutation in 2 genes EVER1 & EVER2 → have been identified as cause of EV.
- Histopathology
  Dependent on the HPV type involved.
  HPV-3 → induce Flat wart like lesions → Similar to that of Common wart.
  HPV-5 (More extensive lesions) → Swollen Keratinocytes with light blue Cytoplasm, nuclei ranging from small & pyknotic → Large with marginated chromatin

→ Therapeutic Modalites For HPV infections:

① Chemical destruction: e.g. Salicylic acid 7.5, Lactic acid 7.5
② Physical destruction → Surgical excision or electrosurgery ∴ HPVs are resistant to heat (due to absence of viral envelope)
→ CryoTherapy → with Liquid nitrogen / less Commonly → CO_2 } → especially for genital warts (///) Treatement of choice during pregnancy.

③ Chemotherapeutic agents → podophyllin resin 20% in collodion → For genital warts.
→ podophyllotoxin 0.5% → applied by The patient at home. (twice daily) 3 days
→ Bleomycin → intralesional → non-genital warts.
→ 5FU → Topically
→ Vaginal & uretheral wart.
→ adjuvent Therapy → after Laser → to ↓↓ recurrence

④ Laser Therapy → Followed by Topical 5FU → to ↓↓ recurrence
⑤ Oral retinoids → For EU → as antiproliferative, antiangiogenesis.
⑥ Imiquimod 5% cream (aldora) • used in # of Condyloma accuminata in adults.
• immune response modifier
• Unique → it doesnot rely on physical destruction of The lesion as other Therapies But it is directed at eradication of The Causative agent (HPV)

• Mechanism
→ after viral infection → Keratinocytes and other cells release cytokines e.g INFα, TNF, IL-1
→ act to protect adjacent Keratinocytes from viral infection
IFN-γ is a cytokine
Until Specific CMI responce is induced
→ Topically applied Imiquimoid (aldara) can induce Keratinocytes and other cells to release INF-α → to inhibit viral replication directly & to promote stronger CMI respons

• Application
- Cream → supplied in a single-dose packet.
- appled to The involved area by The patient
3 times /week at bedtime
washed after 6-10 hours
Treatment duration is up to 16 weeks

3 مرات في الأسبوع قبل النوم
يغسله بعد 7 ساعات.
4 شهور

Side effects
Local irritation → erythema
→ itching
→ erosions.

⑦ Systemic immunomodifiers
- interferon α 2b → intralesionally → 3 times /week For Condyloma acuminatea
- Systemic # by SC or IV route with interferon → also been tried.

⑧ Immunotherapy e.g. intralesional injection of Candida antigen.

Molluscum Contagiosum (MC):

- Self limited Epidermal Pox virus infection.

→ Characterized Clinically by →
- Single or Multiple, Skin coloured, Umbilicated papules.
- Occuring in → Children / sexually active adults (20-29yrs)
- in HIV +ve patients → numerous molluscs usually arise on the face.
- ♂ > ♀

Etiology → Molluscum Contagiosum virus (MCV)

Large / double-Stranded DNA Pox virus.

2 Types → MCV-1 /// Majority of infection (90%)
MCV-2

Transmission
1. Skin to Skin Contact, clothing, or towels → possible in Steam & Sauna baths.
2. Sexual : adults.
3. autoinoculation : atopic patients.

Clinically

IP : 2 WKS → 6 months

Site :- Face, Trunk, axilla, Hands.
- Sexual Transmission : genitalia / lower abdomen / upper Thigh.

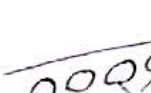
Lesion → it is characterized by
- Single or Multiple
- Small (1-5mm)
- Skin coloured or pearly white.
- waxy, dome shaped
- Papule
- with Umbilicated Center. (which become more apparent after freezing with ethyl chloride).
- A curd-like Substance Can be expressed from its Center

→ Sometimes The lesions becomes inflammatory
- Spontaneouse disappearance within 6-9 months

DD :- Flat wart
- Syringoma.

HIV +ve patients →
1. Hundereds of lesions appear, mainly on The Face
2. Giant Molluscum may occur.
3. Spontaneouse regression doesnot occur.
4. HAART (Highly active anti-retroviral Therapy) → lesions often resolve.

Histopathology
- The epidermis grows down into The dermis as Multiple, closely packed Lobules.
- Many epidermal cells contain Large intracytoplasmic indusion bodies (Molluscum bodies) /// pathognomonic



Treatement
- Because The disease generally resolve Spontaneosly, Self-limited Painful aggressive Therapy is not indicated
- Avoid Swimming pools, shared towels,
1. Curretage with or without Light electro-cautery (Emla cream) Local anaesthetia applied 1h before Therapy to pain
2. CryoTherapy Chemical applications of TCA or phenol to The lesion.